



CONSUMER



MODULE 3:

Consumer Product Testing



Distance
Learning

Alberta
EDUCATION

Science 8

Module 3

CONSUMER PRODUCT TESTING



**Distance
Learning**

Alberta
EDUCATION

Science 8
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Module 3
Consumer Product Testing
Alberta Distance Learning Centre
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Welcome to Module 3!


We hope you'll enjoy your study of Consumer Product Testing.

To make your learning a bit easier, a teacher will help guide you through the material.

So whenever you see this icon,



turn on your audiocassette and listen.



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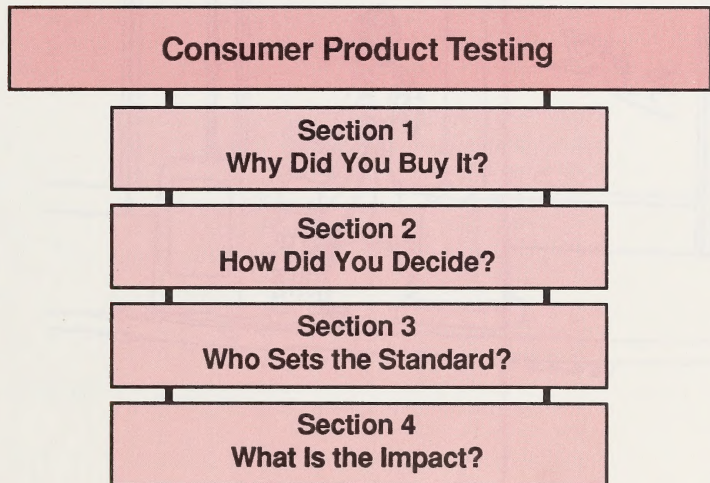
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OVERVIEW

Have you ever looked in your closet to find a shirt that looks faded and worn, although you have only washed it twice; or a cassette tape that only had one song on it that you really liked; or a pair of shoes that you thought had the *latest look*, but you had bought them too late? Why did you buy these things? Is there a way to tell fad from fashion and fashion from function? Shouldn't there be laws to protect the wide-eyed consumer from spending hard-earned dollars on unreliable products? The decisions you make today; plastic or paper, cloth or disposable, brand name or generic; have an impact on everyone in the future.



Evaluation

Your mark in this module will be determined by your work in the Assignment Booklet. You must complete all assignments. In this module you are expected to complete four section assignments. The assignment breakdown is as follows:

Section 1 Assignment	25%
Section 2 Assignment	25%
Section 3 Assignment	25%
Section 4 Assignment	25%
TOTAL	<u>100%</u>

Why Did You Buy It?

You walk into the corner store to buy a pop and a bag of chips. By the time you walk out, you have an empty wallet and enough junk food for all your friends. Something in the store or in your head influenced you to buy all those things.



This section will help you understand why you make some of the purchases that you do. You will be given the opportunity to ask yourself why you bought particular items, and you will learn to recognize that consumer products have a variety of characteristics that need to be considered before you actually buy. A decision-making model will serve as your guide in helping you to become a better consumer.



Activity 1: Reasons for Buying

How do you and your family prepare to go grocery shopping? Do you make a list? Do you wander up and down the aisles? Either method allows you to select products for purchase – although one suggests that you had a significant reason for buying. After-school jobs, allowances, and grandparents often supply you with that extra cash you need to buy something for yourself or someone else.

- 1. Complete the table as follows.

Make a list of ten items you have purchased with your own money. Then think about the reason why you made each purchase. If you find yourself saying you bought something because you wanted it, ask yourself “Why?,” and it will lead to a more thoughtful answer.

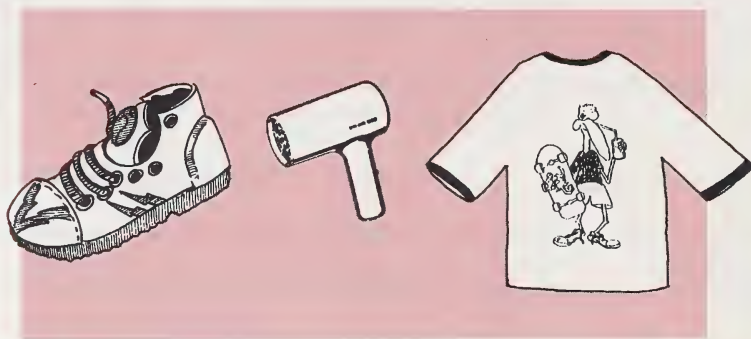
Item	Reason

2. Select the three reasons that were the most common. For each reason, list the items that were purchased for that reason.

[illegible]

Discuss your answers with your learning facilitator.

Activity 2: Looking for Characteristics



Characteristic: a distinct quality or feature that distinguishes one thing from another

1. Make a quick list of **characteristics** that would attract you to buy the items illustrated.

The function of an item has to do with its main use. For example, the function of a paintbrush and a paint roller is painting. The function of a CD player and a record player is to play prerecorded music.

2. In question 1, which characteristics are important to the function of the product.

durability: the ability to stand wear; to last

reliability: dependability, trustworthiness

craftsmanship: the quality of workmanship

3. Name an item that would have one of the following as its most important characteristic:
- a. **durability** _____
 - b. **safety** _____
 - c. **reliability** _____
 - d. **proper fit** _____
 - e. **good craftsmanship** _____
 - f. **good value** _____

Discuss your answers with your learning facilitator.

Activity 3: Quality and Cost



Has there ever been a time when your parents haven't had to stop for gas **before** they deliver you to your friend's house, a party or a game?

That's a subtle way of saying that I'll be operating the self-serve pump!

You sure are lucky to be getting a ride son. The price of gas isn't what it used to be.



Filling the tank is no simple task.
Regular? Supra-Plus?
Supreme?

Which one do I choose??
Maybe we should go to another station?





No trip is complete without a stop at the hardware store.

There never seems to be any parking stalls!

Run on inside and pick up a litre of white paint. I'll circle the block and pick you up in front.



White paint, that's easy enough to buy.

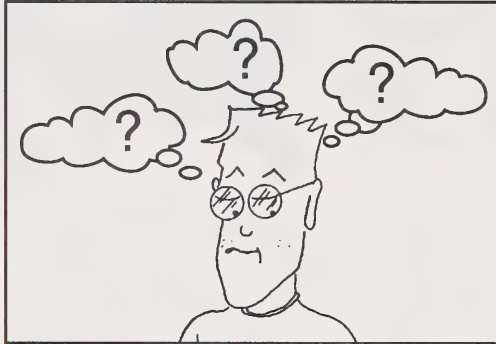
Which can? Best value? Superior? Deluxe?

What about the hardware store down the street? How much does it cost there?

Maybe it will be on sale next week?



Think of a time when you were confronted with a similar decision. Someone had given you a list of items to pick up, but when you got to the store you found you had a large selection to choose from.



1. Write down what the item was, describe the selection, and describe how you finally made your decision.

*quality: a degree of excellence
worth*

*consumer products: products
that people use and/or purchase
to satisfy basic needs and wants*

Knowing exactly what you want before you leave for the store will help you to purchase items that meet your needs. If you think back to your grade seven work on structure and design, you will remember that structure alone did not make a good design. There were other things to consider, like the type of materials something was made of and the properties of those materials. The **quality** of consumer **products** will depend on

- the type of materials used
- design
- craftsmanship
- durability
- reliability

Depending on what the product is, you may want the best that you can afford, or you may be able to settle for a lower quality.

As a consumer, you cannot expect something that is inexpensive to be of high quality. You also cannot expect that just because something is advertised on TV or is a famous brand name that it will function perfectly, effectively, and be of high quality.

High-quality products offer the best in material, design, craftsmanship, durability, and reliability. It is very important to determine what you will be using the product for so that you can choose the quality and price you want to pay.

Products which are lower in quality also serve a purpose and may be worth purchasing. Again you have to consider what you will be using the product for. What are your expectations? Often items that are fads are likely to be out of style quickly and can be purchased at a low quality level.

2. When would you buy a high-quality item?

3. Give two examples of items that are often purchased with high quality in mind?

4. Give two examples of items that could be purchased at a lower quality level?

Shop around. Sometimes you only have to make a few phone calls to get the best value for your dollar.

5. What is the difference in price between a product at a convenience store and the price of a product at a major department store? Work this out as a percent.

6. What is the relationship between the quality of the product and the cost of the product?

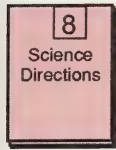
7. What expectations do you have of the product which costs less and is of lower quality?

8. How do those expectations differ from the expectations you have for the product that costs the most?

9. Should you always buy the most expensive *top-of-the-line* product? Why or why not?

10. Think about an item that you are considering to purchase. Use a home catalogue, or either telephone or go to your local stores. Find out how many different levels of quality there are for this item. Also find out what the range of prices is between each store and each quality.

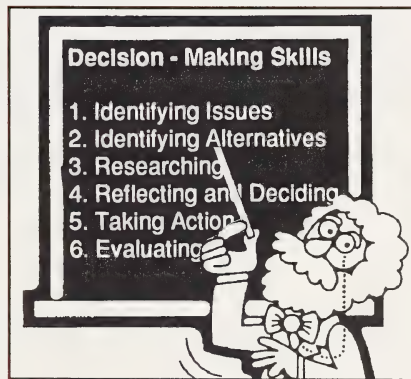




11. Do question 7 on page 121 of your textbook.

Discuss your answers with your learning facilitator.

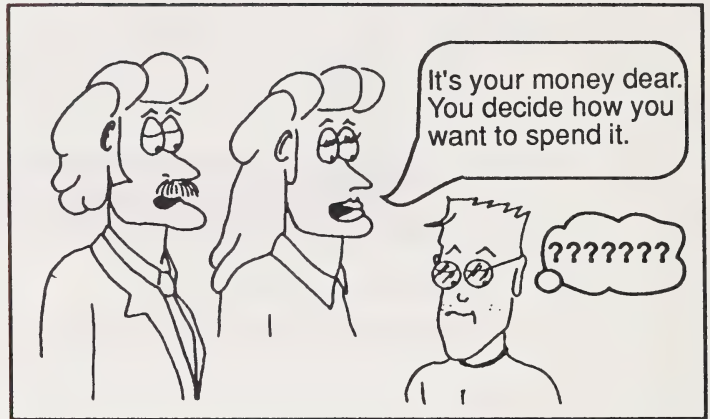
Activity 4: Decisions, Decisions



Look at a few examples, and use the decision-making model to help you make the best consumer decision.

Consumer: a person who uses or buys goods or products

Your parents have said that you may learn to skate and take lessons with your friends as long as you pay for your own skates. They have always encouraged you to make your own money. You have been saving and now have one hundred dollars. What kind of skates are you going to buy?



Use the decision-making model to help you to make your choice.

Step One: Identifying the Issue

1. What is the issue?

Step Two: Identifying Alternatives

Here are some possible alternatives:

- Borrow the equipment from a neighbour.
- Buy brand new top-of-the-line skates.
- Buy the ones endorsed by your favourite athlete.

2. Give two more alternatives that you can think of.

Step Three: Researching

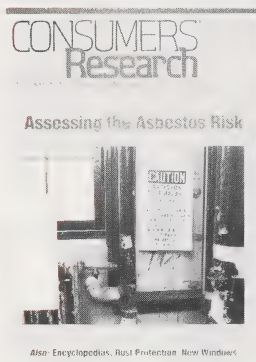
There are a few things that you should think about before selecting one of the alternatives.

- It is your first time on skates.
- The instructor may want you to purchase something in particular.
- There are a number of stores that sell skates.
- You really don't know that much about skates, besides the fact that they should fit comfortably.

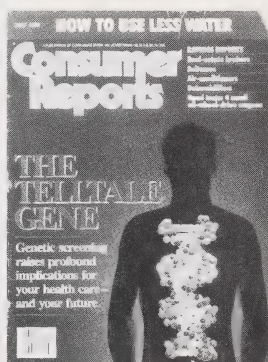
There are several information sources that can help you. You can talk to your parents, your friends, your teacher, or a sporting goods store clerk.

3. Can you think of any other sources of information?

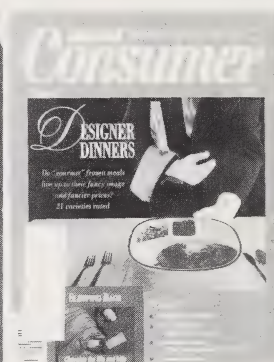
One information source you may not have thought about is your local library or bookstore.



1



2



3

A variety of consumer self-help books and magazines are available in the reference section of your local public library. They include product-testing reports that are similar to the “Which battery is better?” commercials that you see on TV. Here is a sample of what you would see in a consumer magazine that completed a product testing on ice skates. (You may use the information in this sample for your decision-making.)

¹ Consumers' Research Inc. for the cover from *Consumers' Research* Vol. 73, No. 7, July 1990. Reprinted by permission of Consumers' Research Inc.

² Consumers Union for the cover from *Consumer Reports* Vol. 55, No. 7, July 1990. Reprinted by permission of the Consumers Union.

³ Canadian Consumer Inc. for the cover from *Canadian Consumer* Vol. 20, No. 6, 1990. Reprinted by permission of the Canadian Consumer Inc.

Ice Skates

Nylon Reinforced Leather Boot	Average Price	Inner Boot	Ankle Support	Blade	Support Rating	Workmanship Rating	Overall Value
Fire Star Supreme	65	leather	cardboard	stainless steel	poor	poor	poor
White Lightning	82	leather	plastic	carbon steel	best	best	best
Universal Pros	125	leather	leather	carbon steel	good	best	good
Universal Amateurs	100	leather	plastic	stainless steel	fair	good	good
Moulded Plastic Boot							
Fire Star Laser	95	nylon	plastic	stainless steel	good	fair	fair
White Panther	112	felt	leather	carbon steel	best	best	good
Universal Pro-trek	137	leather	plastic	carbon steel	poor	fair	fair

The article also includes information about how to get a proper fitting skate, what features are important for high quality, and how to care for your skates. It includes tips on how to buy second-hand skates that are still in good shape. Using the article is an easy way to shop around. Your research may lead you to thinking of additional alternatives. If you have thought of any other alternatives, add them to your list.

Step Four: Reflecting and Deciding

During this step think about all the information you have gathered.
 What did your neighbors say about borrowing skates from them?
 What type of skates did the instructor suggest?
 What did the sporting goods clerk suggest?
 What did the consumer product report suggest?
 Can you afford the pair you have chosen?
 Is it good value for your dollar?

4. Can you think of anything else that may influence your decision?

5. Where do safety, durability and reliability, materials, and craftsmanship fit in?

Now, based on the alternatives you have written down and the advice from others, you must make your own decisions.

6. What alternative did you choose?

Step Five: Taking Action

You have just made a decision. If you followed each step carefully, you can feel confident and accept the responsibility for making this decision. You have made a certain choice based on alternatives and research, and you have specific reasons for making your choice.

7. What were your reasons for making that choice?

8. Why didn't you choose some of the other alternatives?

Just because you have made a decision on what to buy, doesn't mean you run to the first store you see and purchase it.

Check with several stores for

- sale prices
- the best guarantee
- quality service
- a fair return policy

You can do this by going to various stores, reading several catalogues, or making inquiries by telephone.

9. Which store will most likely have the lower prices, a department store that sells a higher volume of merchandise or the small convenience store on the corner that sells less merchandise?

10. When would be the best time of year to get skates on sale?

Step Six: Evaluating

In this step you can take a look at the effect your actions had on others. In order to do the next question, report your decision and how you arrived at this decision to some of those who would be affected. Find out what their reactions would be if you actually carried out the action of getting the skates the way you decided.

11. How would the following view your decision and why?
- a. parents or guardians

b. your friends

c. the people who originally owned the skates

12. How do you feel about the decisions you made, and why do you feel that way?

13. What would you change if you had to make the same decision again? Give reasons for any change.

Some of the following questions that you ask yourself will be answered in the year ahead.

Do the skates perform as well as I expected them to?

Are they durable and reliable?

Would I buy skates of the same brand again?

The decisions that you make today will help you to make other decisions in the future. Don't forget to follow the decision-making model.

Discuss your answers with your learning facilitator.

Follow-up Activities

If you had difficulties understanding the concepts in the activities, it is recommended that you do the Extra Help. If you have a clear understanding of the concepts, it is recommended that you do the Enrichment.

Extra Help

To help you master the concept of understanding product characteristics, complete the following activities.

- 1. Read pages 108 and 109 in your textbook and do Activity 3-1, Considering Characteristics. Space is provided for your answers.

PART A

Textbook question 1:

_____ , _____

Textbook question 2:

_____ , _____

Textbook question 3. (a):

Textbook question 3. (b):

PART B

Textbook question 1:

_____ , _____

Textbook question 2:



Textbook question 3:

PART C

Textbook question 1:

Textbook question 2:

Textbook question 3. (a):

Textbook question 3. (b):

PART D

Textbook question 1:

Textbook question 2:

Use the following newspaper article and the decision-making model to help you buy a bicycle helmet.

Thin shell, soft foam top bike helmet

Bill Laitner
Knight-Ridder Newspapers

“You MUST wear a helmet.” That’s fast becoming the rule in most bike races and cycling events, and it’s the firm advice of trauma specialists, emergency room doctors and pediatricians.

Bike helmets could prevent hundreds of fatalities a year and reduce the severity of thousands of serious head injuries, experts say.

But helmets aren’t cheap. Most cost \$30 to \$60 (children’s models are slightly less). If you’re about to buy one, get more protection for your dollar by heeding the advice of a Wayne State University (Mich.) researcher.

His tests show that, although any helmet is better than none, some are better at protecting a cyclist from the trauma of flying head-first into concrete pavement or auto steel.

Soft-shell helmets, made of plastic foam, can “grip the pavement and then roll like a wheel,” putting tremendous stress on the neck and greatly increasing injuries, says

Voigt Hodgson, PhD.
In contrast, hard-shell helmets usually skid when they hit pavement, reducing injury risk, says Hodgson, who heads the biomechanics laboratory in the Department of Neurosurgery. His research was funded by the nonprofit Michigan Head Injury Alliance and by the state Department of Public Health.

Soft-shell helmets have taken the industry by storm because of their light weight and comfort. Most kids’ helmets are soft-shells.

A third type, called thin-shells, provides the best of both designs—a thin plastic shell over lightweight foam. Although Hodgson has yet to test thin-shells “it seems logical to assume” that they are less “sticky” on impact with pavement than soft-shells, says the May issue of *Bicycling* magazine, in its 1990 *Helmet Buyer’s Guide*.

Whichever type you choose, look for an approval label of ANSI or Snell, two helmet standards groups.

Then, never cycle without your helmet, says Hodgson.¹

¹The *Edmonton Journal* for the article from *The Edmonton Journal* “Thin shell, soft foam top bike helmet” July 13, 1990, p. E5. Reprinted by permission of *The Edmonton Journal*.

Step One: Identifying the Issue

The issue is: What type of bicycle helmet should I buy?

Step Two: Identifying Alternatives

2. What types of helmets are available?

Step Three: Researching

3. What useful information about each type of helmet is found in the newspaper article?

Step Four: Reflecting and Deciding

Think about cost and safety, and where, how often, and how fast you ride.

Step Five: Taking Action

4. Which type of helmet would you buy?

Step Six: Evaluating

5. Explain why your choice is the right one.

Check your answers with your learning facilitator.

Enrichment

In this section you have learned about the many reasons why people buy certain products.

Imagine that you are a convenience store owner and that you have just purchased the shop next door to expand your business. You open one of the back storage rooms and find that along with a few pieces of furniture, you have purchased 1500 boxes of tongue depressors.

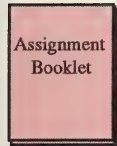
Make up a full page newspaper advertisement which would describe all the possible uses of tongue depressors. Plan your advertisement by first listing your ideas in point form.

Share your answers with your learning facilitator.

Conclusion

In this section you have learned why you buy some of the products that you do. It might be because your friends have them or because the function of the product suits your needs. You are also beginning to realize that products may affect different people in different ways.

The most important skill you are beginning to learn is how to make good decisions by following the six step decision-making model.



ASSIGNMENT

Turn to your Assignment Booklet and do the assignment for Section 1.

How Did You Decide?

You're standing in front of a store display for portable stereos. They all look so appealing. Which one? They may differ in price, colour, and a few features, but that's it, or is it? Which one do you get? How do you make that final decision to spend your money without any regrets?

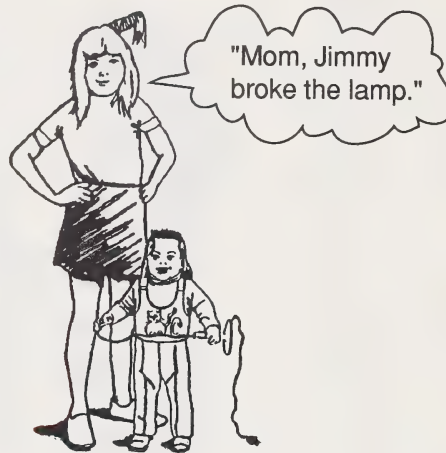


In this section you will gain confidence in making wise choices in purchasing by going through a series of decision-making steps and by testing and comparing products that you may already have at home. You will understand that products affect different people in different ways, and that products that are safe to use in one way, may not be safe to use in another way or by another person.



Activity 1: Why Things Do Not Last

Has there ever been a time when something you, or your family, owned wore out before you thought it was time? Did you blame yourself, thinking that you misused it; did you blame the manufacturer for not putting it together properly; or was it the store's fault for selling it to you in the first place? Have you or your family ever purchased something that later turned out to be defective? Where would the blame belong then?



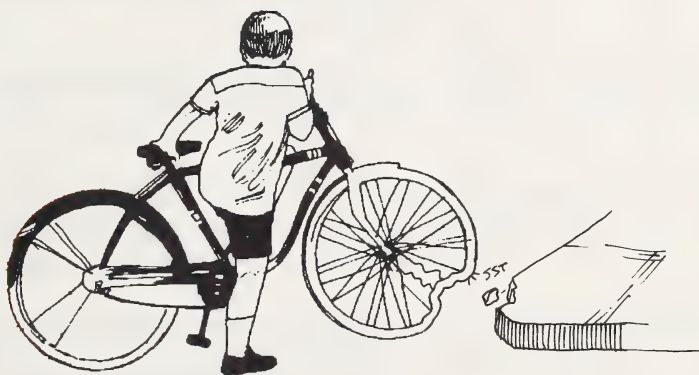
1. Make a list of five items that you or your family have purchased over the years that eventually wore out or broke. Beside each item write down briefly how it failed.

A product most often fails because of

- poor materials used in its manufacture
- poor design
- poor craftsmanship
- poor user maintenance or misuse

Even though Jimmy broke the lamp, one of these reasons is still involved. Jimmy is not necessarily at fault.

Take a look at one item that frequently needs repair – a bicycle.



In the illustration you can see that the bicycle rim was most likely bent because of rider misuse; the rim was put under stress by being ridden up a curb or over rough terrain for which the bike was not built.

2. Go back to the list that you developed in question 1, and indicate to the left of the item whether the failure was due to one or more of the following:
 - poor choice of materials (M)
 - poor design (D)
 - poor craftsmanship (C)
 - poor user maintenance (UM)

There are several products in a household which have weaknesses. For example, chairs have legs which can wobble or spread, and dishes can chip or crack.

3. Can you think of three products in your house that haven't broken yet, but have weaknesses which indicate that they might break down?

Using one of the items that you have listed previously, redesign it so that it is an improved product. Would you change the materials, the design, or the craftsmanship?

4. Either write a *before* and *after* description of what you would change, or draw a *before* and *after* sketch.

[illegible]

Most products have a manufacturer's address on the package of the product or somewhere on the labelling. (The address can also be found by asking the librarian at your local library.)

5. In the space provided, write a business letter to the manufacturer of the product that has weaknesses. Describe how you redesigned the product to improve it, by changing either the materials, design, or workmanship.

In writing your letter, be sure to address the President of the company and introduce yourself. Describe the product very clearly; you should include any model number or bar coding (.IIIII) number that appears on the label. Be sure that the tone of your letter is polite and to the point. Remember to include a return address so that you may get a reply, should you decide to send the letter. (Recopy the letter onto stationary in order to mail it to the manufacturer.)

[illegible]

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Discuss your answers with your learning facilitator.

Activity 2: Making Product Testing Fair

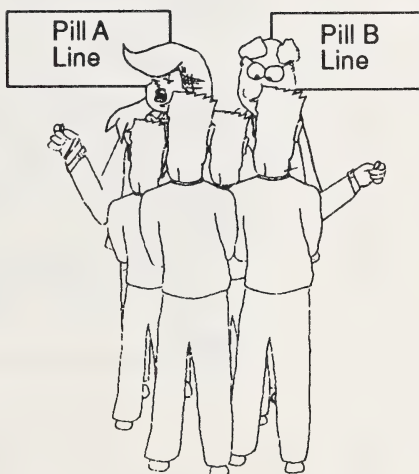
Think about some of the products that you have seen advertised in magazines or on TV. Concentrate on the commercials that compared two competing products with each other. Do you remember them using the words “in a blind taste test, more people preferred...” or “viewers polled said they prefer...”? All these types of consumer tests evaluate the product for the manufacturer. They also help to sell the product to other consumers.

1. Write down as many products as you can which are advertised through these methods.

Remember when you had a scraped knee and your mother would kiss it better? Somehow after all the hugs and kisses, it really did feel better.

Have you ever known a person who has taken an ASA tablet, and within two or three minutes the headache was gone? It takes at least 15 to 20 minutes for that type of medication to even begin to work. So why did it work so fast on this particular person?

The same reason your mother's kiss worked on your scraped knee. You wanted it to work, so it did.



pharmacologists: a person trained in the science of drugs, including their preparation, uses, effects, sources, and properties

unbiased: fair, impartial, not favouring one side or the other

placebo: medication containing no active substances, given as a control in an experiment often in the development of a new drug

blind test: an experiment in which the participants do not know if they have been given the real medication or the placebo

double blind: an experiment in which neither the participants or the person directing the experiments knows who is receiving the real substance and who is receiving the placebo

When **pharmacologists** develop a new drug, one of the final things they do is ask for volunteers to test it. The testing must be **unbiased** so that accurate results are obtained. In these procedures they give some of the volunteers the real medication, and the others receive a **placebo**. These experiments are usually run as a **blind test**. In a blind test the volunteers do not know who received the real medication and who received the harmless, inactive replacement. Sometimes, when those who are directing the test could manipulate the results, the test is done **double blind**.

Use the following newspaper article to help you have a better understanding of the process of blind testing.

Cold sores? University survey is looking for you

By Mary-Ann Thurber
Neighbors Reporter

People who suffer from painful cold sores could be instrumental in fighting them by cooperating with a university study.

The Faculty of Dentistry at the University of Alberta is conducting ongoing testing on a new drug used in the prevention of cold sores. It needs 40 to 60 new volunteers to help with the research.

The testing of the new drug, called Zovirax, is a requirement of the national Health Policy Branch which licences new medications.

The study is funded with a grant by the company which manufactures the drug. Dr. Wayne Rayburn, professor of dentistry at the U of A says the study is an independent program to measure the results of the medication.

The study has been going on for about a year now and currently has about 100 cold sore sufferers enrolled.

Rayburn says to join the research

group, new patients must suffer outbreaks of cold sores four or five times per year. Under the study, patients will be examined for three-day periods throughout the year.

Each new patient will be given a medication to apply to combat cold sores. Rayburn says some of the medications will contain the drug Zovirax, others will not. The results will then be measured through daily examinations throughout the three-day span of the test.

The tests will be run in all four seasons. Because cold sores are formed by exposure to the ultraviolet rays of the sun, Rayburn says they can appear after a long day of skiing, playing tennis or any other outdoor activity.

"We could especially use the help of people who are going out waterskiing, golfing, and playing tennis and who will be in the sun for a while."

To find out more information about the study, call the study office at 439-XXXX.¹

¹ *The Edmonton Journal* for the article from *The Edmonton Journal* "Cold sores? University survey is looking for you" July 15, 1990, Neighbours Section p.8. Reprinted by permission of *The Edmonton Journal*.

2. What is the purpose of the testing?

3. Describe the test being conducted.

4. Is this a blind test? Explain.

5. Why must the test be conducted?

6. Who is funding the study?

7. Why is it necessary to have a blind test?

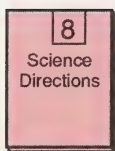
8. What are some problems that you think they will encounter?

As you saw in the first exercise, many television commercials also incorporate the use of a blind test in their advertising. The only difference is that instead of a placebo, they often give the volunteer a competitor's product.

In *Science Directions 8* there is a section for you to read called Designing a Test, which begins on page 110 and continues onto page 111. It discusses how scientists go about designing tests for products by looking at an example using dishwashing liquids and dirty dishes.

9. Choose three variables that are listed in the middle of page 110. Describe how these variables would affect the results of a test if they were not kept the same during a test which involved different types of dishwashing liquid and different amounts of dishes cleaned.

Check your answers with your learning facilitator.



Activity 3: Developing and Carrying out Tests

If you ever packed a suitcase, you would know that there are some clothes that you just don't jam into a bag, unless you want to look like you've slept in them. If you've ever done laundry, you would know that there are some clothes that you just don't wash together, unless you want a wardrobe of new colours. Likewise there are some clothes that you don't put in the dryer, unless you plan on dropping a size or two.

1. Recall a time where one of these surprises happened to you or someone you know.

In *Science Directions 8* read Testing and the Fabric Industry on page 117 and 118. It discusses the development of fabrics for the clothing industry.

Use Activity 3-4, Fashion or Function, on pages 119 and 120 of your textbook, as a guide in determining various characteristics of fabrics.

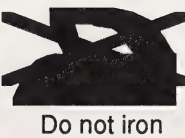
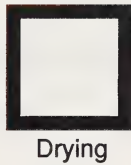
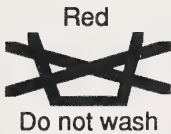
Obtain samples of various types of fabric such as cotton, nylon, and wool, and perform a series of tests on them relating to fabric durability and utility. You may use a measuring cup for a beaker, a spoon for a stirring rod, and tongs for forceps.

2. Record your data in the table.

Comparison of Fabric Samples			
Characteristic	Fabric A	Fabric B	Fabric C
crease resistance			
wind resistance			
colourfastness			
shrinkage			

Check your answers with your learning facilitator.

Almost every garment has a care label inside which tells you how you should launder it. The care label uses a code system based on five symbols, each representing a basic care procedure. The symbols come in red, amber, or green to show how careful to be for each procedure.



Look around your home for clothes that have a readable care label inside. Try to find clothes that have the same fabric as you used in the previous durability and utility tests. Use these clothes for the next question.

3. Using the three different fabrics, complete the following charts by drawing in the appropriate symbols in the correct colours.

Type of Fabric: _____	
Procedure	Symbol
Washing	
Bleaching	
Drying	
Ironing	
Dry Cleaning	

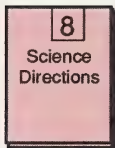
Type of Fabric: _____	
Procedure	Symbol
Washing	
Bleaching	
Drying	
Ironing	
Dry Cleaning	

Type of Fabric: _____	
Procedure	Symbol
Washing	
Bleaching	
Drying	
Ironing	
Dry Cleaning	

4. What is the relationship between the type of fabric and the instructions for care?
5. What would happen if you did not follow the instructions?

6. How do you think the manufacturer of the clothing found out what instructions to put on the label?

Check your answers with your learning facilitator.

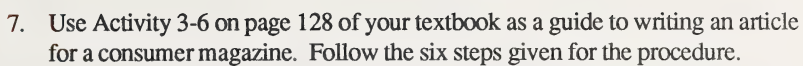


Read Testing and Consumer Groups on page 127 of your textbook, *Science Directions 8*. Find out how consumer groups provide more information about product testing.

For the next question you are to write a short article based on some research you have done on a consumer product. Your article should have the following features:

- The introduction should provide some background. It should describe the product, tell about the development of the product, and indicate why the product would be of interest to the reader. It should inform the reader about what characteristic is to be tested.
- There should be a description of the test carried out.
- A chart summarizing the test results should be included.
- The article should conclude with an interpretation of test results and a recommendation about product selection.

With these features your articles would serve well in a consumer magazine.



Textbook question 1:

[illegible]

Textbook question 2:

Textbook question 3:

You do not have to report anything for this part. Make sure you receive approval from your facilitator for carrying out your test.

Record your results as you carry out your tests. Use the chart you made in question 3. You may also want to make some rough notes on your own paper.

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This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There is no handwriting or printed text on the page.

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There is no handwriting or printed text on the page.

Activity 4: From Concept to Consumer

Remember back when playing arcade games meant you had to save up your allowance and then get Mom's permission to go down to the arcade. Now the best arcade games can be played in your own home. Think of all the ways in which arcade games can be played in your own home. Think of all the ways in which arcade games have changed.



1. Write down all the changes that have occurred in video games to make them more convenient and accessible. Be sure to include changes that have occurred in size and in how the games are powered.

The size of an arcade or video game has changed over the years because of tests involving consumer research.

Every product on the market goes through a series of product-testing stages. From the moment an idea is conceived to the final product being on display for the consumer, decisions are being made which are based on information gathered from consumer research and product testing.

The ideas that inventors often think of are a result of three discoveries:

- that a need must be met
- that there is room in the marketplace for the competition
- that it is an improvement based on technological advancement

Several Canadians are responsible for some zany as well as some very practical inventions. From the Automatic Hat Tipper, 1912, designed to allow a gentleman to tip his hat to a lady without having to remove his hands from his pockets, to Instant Mashed Potato Flakes invented by Dr. E.A. Asselbergs in 1961.

After someone has an idea, the idea itself is tested before further investments of time and money are put towards it.

2. What would be some of the ways in which you could find out if consumers would buy a new product?

If the consumers seem to like the idea, time and dollars are invested in further research and development.

3. If you were the inventor of Instant Mashed Potato Flakes, what type of research would you do, and what kind of tests would you perform before you settled on one version of your product?

Some things you should consider are

- microbes
- preservation
- nutrition

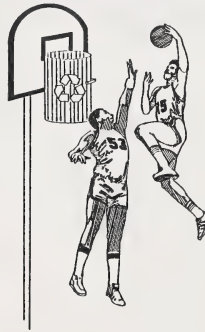
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A black and white line drawing of a gas station scene. In the foreground, a classic convertible car is parked. Behind it, a dark sedan is at a gas pump. A gas attendant in a cowboy hat stands by the pump. The station has a sign with a star and the word 'GAS' on the pump.

- [illegible]

Some ideas make it in the marketplace, and some ideas like the Automatic Hat Tipper don't get too far. If a product makes it past the original research testing and everyone has reached a consensus that the product has possibilities, then a trial run will be made in the marketplace.

James Naismith, who invented the game of basketball in 1891, started by shooting into refuse boxes. After a trial run, he decided on peach baskets with the bottoms removed and much later this was further improved to the hoop you have today.



Pilot runs are also done with new television programs. Networks will run previews or pilots of new programs that they would like to show in the new fall season. If the viewer ratings are not high, the program may be taken off the air or changed. Sometimes a network will use a highly-rated program to help introduce a *spin-off* or new program. Often this involves some of the old program's characters getting a show of their own.

5. Name a television program that you recall seeing a pilot for.
-

6. Name one television program that was a spin-off of a highly-rated program.

The final evaluation of the product is in the hands of the consumer. As long as the product is selling, it will stay on the market.

7. Look in a local newspaper in the Entertainment section. List one of the movies that has had the longest running time.

Once a product is on the market it will inspire others to improve upon it. Therefore, new ideas will be developed and the process will start all over again.

Discuss your answers with your learning facilitator.

Follow-up Activities

If you had difficulties understanding the concepts in the activities, it is recommended that you do the Extra Help. If you have a clear understanding of the concepts, it is recommended that you do the Enrichment.

Extra Help

To help you to master the concept of understanding product testing and understanding how products fail, complete the following.

In *Science Directions* 8 there is a section for you to read called Product Testing, which begins on page 122 and continues to page 125. It discusses how products are tested, using a camera as an example.

1. Tell how accelerated aging is used to test a camera.



2. How can recurring problems with a product be identified?

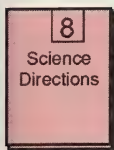
3. Do the following questions from page 121 of your textbook.

Textbook question 5:

Textbook question 6. (a):

Check your answers with your learning facilitator.





Read **Improving Products** on pages 115 and 116 of *Science Directions 8*. This reading discusses how products have been improved over the years with the help of science and technology.

Take a trip to your local museum, archives, pioneer park, or talk to someone older to find out how certain products have developed over the years.

Use the following space to briefly write about products that have changed. Tell whether the changes have always been improvements.

[illegible]

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This image shows a single sheet of white paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Share your answers with your learning facilitator.

Conclusion

In this section you have learned the importance of an unbiased test. You have also discovered that the testing of products is a long process that involves many variables by testing and comparing products that you may already have had at home. You now have a better understanding that products affect different people in different ways and that products that are safe in one way may not be safe to use in another way or by another person.

ASSIGNMENT

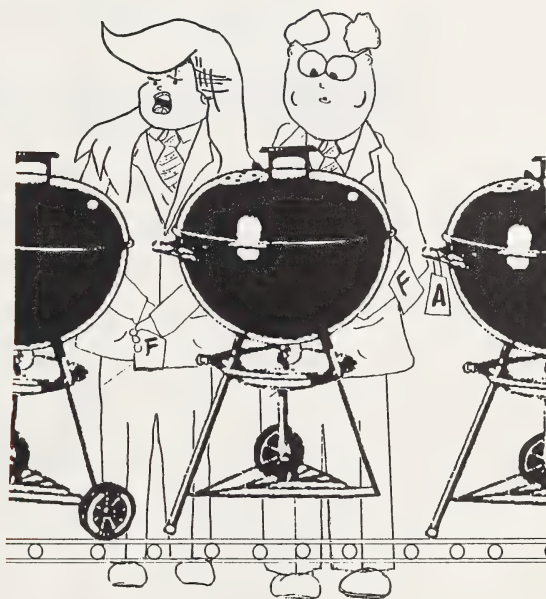
Turn to your Assignment Booklet and do the assignment for Section 2.

ASSIGNMENT

Turn to your Assignment Booklet and do the assignment for Section 2.

Who Sets the Standards?

You have always walked into the corner store with great confidence, willing to buy whatever was on the shelf when you needed to. How do you know that what's on the supermarket shelf is safe? Is it what it claims to be? How do you know that it will be reliable?



In this section you will examine the standards and regulations that are set to make sure products are safe and to assure the consumer that minimum expectations are met. Also, you will see how manufacturers inform consumers about their products.

Finally, you will have a greater appreciation as to why standards are set to ensure product quality.



Activity 1: Safety and Standards

Have you, or anyone you know, had to get an electrical cord replaced on an appliance?

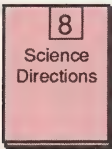
1. What would happen if you didn't get it repaired?

Find out more about the needs for safety standards and how they are set by reading pages 129-131 in *Science Directions* 8.

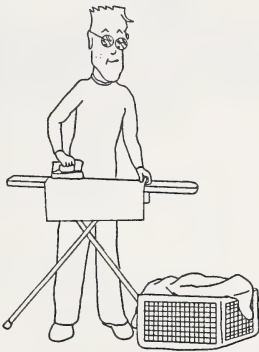
2. Think of at least five questions you think an inspector would ask, regarding a compact hair dryer, before it was given the Canadian Standards Association stamp of approval?

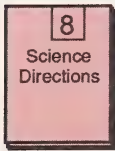


Be sure your questions include aspects of safety, reliability, durability, and specific performance expectations.



3. What three types of tests would you perform on an electric clothes iron before you approved it for sale to consumers?





4. Look for CSA labels on the electrical appliances that you have at home and complete the Probing question on page 131 of your textbook. Write your answer in the space provided. (Use a listing rather than drawings to identify the labels.)

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

5. Choose an electrical appliance that you might have at home, maybe a toaster, blender, vacuum cleaner, or coffeemaker. Name all the different parts that make up its design. For each part, tell what you would test it for.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Science 8

Activity 2: Packaging, Labelling, and Advertising

When searching down the grocery aisle for a breakfast cereal, what is it that attracts you to buy the brand? Is it the colour of the box, the advertising you have seen on TV, the nutritional information, or the prize that is offered inside?

1. Take a look inside your cupboard and make a quick list of the features that appear on a cereal box.

Each package that food is stored in has been carefully designed to perform a variety of functions. The package has to

- contain the product
 - keep the product fresh while maintaining nutrition levels
 - keep it free from contamination
 - inform the consumer as to exactly what is in the package
 - attract the consumer into buying the product
2. Look back at the list you made in question 1; check off which features match up with the first four functions previously listed.
 3. List which features match up with the function of attracting the consumer to buy.

Check your answers with your learning facilitator.

Therefore, consumers are buying on the basis of quality. Standards have been set for product packaging, labelling, and advertising.

The Department of Consumer and Corporate Affairs is responsible for making sure packaging, labelling, and advertising follows the guidelines set by the

- Consumer Packaging and Labelling Act
- Food and Drugs Act

All food products that are imported into Canada must follow the standards set in the preceding Acts.

For food product packaging and labelling, the standards require that the following must appear on the label in both French and English:

- the common name of the food
- the net quantity of the food
- the name and address of the person responsible for the product
- the list of ingredients (from greatest to least amount)
- the durable life date (*Best before*, *Use by*, or expiration date)
- storage instructions



There are many people who have allergies to certain foods and food additives. Maybe you have one yourself. In some cases, if a person were to eat a food that they are allergic to, it could be life threatening. That is another reason why manufacturers list the ingredients on food labels and packages. Now even fast food outlets are required to make available to its customers a list of ingredients in their products.

4. Manufacturers of consumer products must make sure that the labels and advertising are consistent with what the product is. See if you can guess what product these ingredient labels are describing.

a. beans, water, sugar, tomato paste, pork, salt

b. milk solids, cream, sugar, glucose, powdered whey, guar gum, mono- and di-glycerides, carboxymethyl cellulose, carrageenan, polysorbate 80, artificial flavour, colour

c. noodles, salt, sugar, chicken fat, vegetable shortening, onion, hydrolyzed plant protein, spices, dextrose, monosodium glutamate

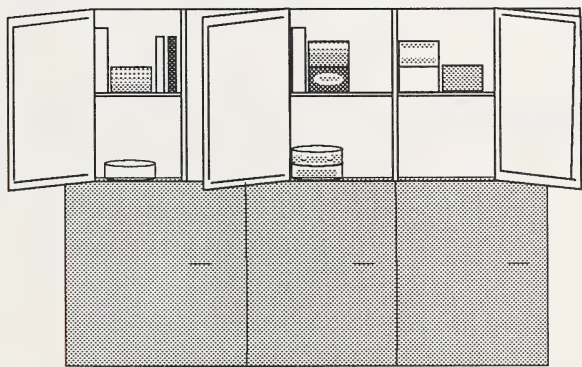
d. sugar, citric acid, artificial grape flavouring, ascorbic acid, colour, acetic acid

e. peanuts, vegetable oil, mono- and di-glycerides, salt

f. rolled oats, brown sugar, sweet chocolate chips (sugar, chocolate liquor, cocoa butter, lecithin, vanilla extract), rolled whole wheat, dehydrated marshmallows (sugar, glucose, food starch gelatin, sodium hexametaphosphate, artificial and natural flavours, colour), coconut oil, glycerin, graham cracker crumbs (enriched flour, glucose, graham flour, vegetable oil, sodium bicarbonate, salt, whey powder, honey), dried sweetened coconut, vegetable oil, skim milk powder, sorbitol, whey powder, honey, salt, natural and artificial flavours, BHA, citric acid

- g. corn syrup, sugar, water, gelatine, artificial flavour, vanilla extract, sodium hexametaphosphate
- h. sugar, modified and hydrogenated palm, vegetable and coconut oils, glucose, coconut oil, chocolate, modified milk ingredients, peanuts, flour, condensed milk, cocoa butter, sorbitol, salt, glycerin, yeast, soya lecithin, citric acid, sodium bicarbonate, calcium sulphate, ammonium chloride, potassium bromate, natural and artificial flavour, artificial vanilla extract, colour

Check your answers by turning to the Appendix, Section 3: Activity 2.



5. Look at some of the products found in kitchen cupboards. Read the label in order to answer the following.

a. What words and colours are used to make the label persuasive?

b. What instructions for preparation are given?

c. What recipes are given?

d. What ingredients are listed?

e. Do any warning messages appear?

f. What kind of nutritional information can be found?

g. What variation was there in size, shape, and type of packaging?

h. Was there any instance of too much packaging? If so, tell about it.

6. Pick a food product that has unusually busy labelling. Redesign the packaging so that only the information required by law is shown. Make a drawing of the product in the packaging as you have designed it.

Generic products, which do not have a brand name, are often less expensive – sometimes because of lower quality.

7. What is another reason why they are less expensive?

Discuss your answers with your learning facilitator.

Television and radio advertisements, originating in Canada, must be approved through the Canadian Radio and Television Commission and the Department of Consumer and Corporate Affairs. This is done so that the advertisements read, heard, or seen are honest and not in any way misleading.

Canada, however, has no authority over broadcasts received directly from the United States.

In addition to the regulations already mentioned, consumers in Canada are fortunate to be protected by a variety of legislative acts:

- Hazardous Products Act
- Fish Inspection Act
- Textile Labelling Act
- Weights and Measures Act
- Electricity Inspection Act
- Gas Inspection Act
- Combines Investigation Act

Unfortunately, all the products sold in stores are not covered by the various Acts and Regulations.

The consumers still have a responsibility:

- to shop wisely
- to report products that they are not satisfied with
- to report unfair business practices to the Better Business Bureau
- to report apparently unsafe merchandise to Consumer and Corporate Affairs so it can be tested

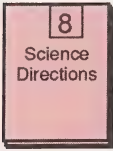
8. Take a guess and see if you can match the following Acts with the standard they uphold.

- _____ Hazardous Products Act
- _____ Consumer Packaging and Labelling Act
- _____ Fish Inspection Act
- _____ Textile Labelling Act
- _____ Weights and Measures Act
- _____ Food and Drug Act

- A. daily catch is free from contamination
- B. weight of products purchased is correct
- C. packaged food contains the true ingredients
- D. toxic products are disposed of accordingly
- E. prescription and over-the-counter drugs are safe and reliable
- F. clothing products have care labels which indicate washing instructions

Check your answers by turning to the Appendix, Section 3: Activity 2.





To make you more aware of the advertising around you and whether or not it is a reliable source of information, read page 138 in *Science Directions 8*.

9. Give one advertising claim that would be hard to test.

10. Refer to page 139 of your textbook. Do the following from that page.

Procedure

Textbook question 1:

Refer to your advertisements as Ad#1, Ad #2, and Ad #3. Tell where each advertisement was seen or heard.

Textbook question 2:

Textbook question 3:

Textbook question 4:

Finding Out

Textbook question 1. (a):

Textbook question 1. (b):

Textbook question 2. (a):

Textbook question 2. (b):

Textbook question 2. (c):

Textbook question 3. (a):

Textbook question 3. (b):

Textbook question 4:

Textbook question 5. (a):

Textbook question 5. (b):

Textbook question 5. (c):

Discuss your answers with your learning facilitator.

Activity 3: Reading the Directions

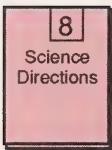
Do you remember the last time you tried to do something without properly reading the directions first? Maybe it was an assignment for school. Maybe you were trying a new recipe. Maybe you were putting together a piece of furniture. Maybe you were inflating the tire on your bike.

1. What were the consequences of your decision?

Manufacturers of consumer goods spend much time in making the instructions for using a product extremely clear. Instructions for the use of a product may be clearly written by the manufacturer; however, if you fail to follow those directions, it could lead to serious consequences in which either you get hurt or the product gets damaged.

In *Science Directions* 8, you will learn more about the things that the consumer has to watch out for. Read *Consumer Beware!* on page 132 and 133.

2. Do Activity 3-8, Safety First, in your text on page 133. Space has been provided for your sample set of instructions on the safe use of a bicycle.



Many products do not come with any instructions. You learn how to safely use them from adults that you watch. You copy their behaviour.

3. Write your own set of instructions for one of the following: a kitchen knife, an electric stove, a pair of scissors, or another item of your own choice. Make sure your instructions include information about maintenance of the product, proper operation of the product, and indication of who can use the product (age range).

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Check your answers with your learning facilitator.

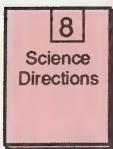
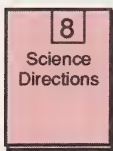
Activity 4: Watching for Warnings



WESTFILE INC.

Look around at the many over-the-counter medications, cleaning fluids, paints, and polishes that you have in your home.

1. Write down some of the warnings, or sketch the pictures that represent the warnings.



Science Directions 8 gives you more information about warning signs. Read page 134.

2. Do question 3 on page 152 of your textbook.

Textbook question 3. (a):

Textbook question 3. (b):

Textbook question 3. (c):

Textbook question 3. (d):

3. List several products in your home that had a symbol to indicate possible danger.

Check your answers with your learning facilitator.

Follow-up Activities

If you had difficulties understanding the concepts in the activities, it is recommended that you do the Extra Help. If you have a clear understanding of the concepts, it is recommended that you do the Enrichment.

Extra Help

To help you to master the concept of understanding why product standards are important, read the following paragraphs and complete the questions in the space provided.

If standards with rules and laws were not set in society, there would be great confusion. Imagine people not stopping for red lights or not driving on the right side of the road. It would cause unsafe situations. Consumer products must be made to meet certain standards as well. One reason why we have standards is to ensure safety, but there are also many others. There has to be controls on quality, otherwise the consumer would have an abundance of products on the market to choose from, some not as reliable as others. There must be set standards on sizes of some products so that replacement parts can be manufactured. Instructions and information must be written clearly so that the consumer knows exactly what they are paying for and how to use it properly.

Match these statements with the following statements by placing the appropriate letters in the blanks.

- A. The list of ingredients must be accurate.
- B. Signs must be used to indicate the possible danger of a product.
- C. Clothes must be labelled for size.
- D. Replacement parts must be the same as the original.
- E. Tools must be standardized.
- F. Fabrics must be safe for the user.
- G. An expiry date should be displayed on foods.
- H. Proper directions must be provided.

- _____ 1. You need to replace the *D* size batteries in your portable stereo.
- _____ 2. You are allergic to peanuts and any products made from peanuts.
- _____ 3. You are buying your uncle a screwdriver set for his birthday.
- _____ 4. The warning sign on the spray says it is highly explosive.
- _____ 5. Mix two parts of the concentrate with four parts water.
- _____ 6. You need to buy a wool liner for your winter parka.
- _____ 7. You know that food, if not canned properly, can be poisonous.
- _____ 8. Night clothes for children are made from fabrics which do not burn easily.

Check your answers by turning to the Appendix, Section 3: Extra Help.

Enrichment

In Activity 4 you looked at warning symbols that act as visual cues for people to tell them of the particular dangers of a product. Draw visual cues of your own to tell consumers about some of these product characteristics: edible, biodegradable, cholesterol free, testing of the products has not harmed animals, pollution free, amount of energy used to make this product (your symbols may include words).

Share your answers with your learning facilitator.

Conclusion

In this section you have examined the reasons why standards and regulations are set. You have also looked at the roles that advertising and labelling play in informing consumers so they can make wise decisions. You now have a greater appreciation as to how standards are used to ensure that quality products are made available to the consumer.

Assignment
Booklet

ASSIGNMENT

Turn to your Assignment Booklet and do the assignment for Section 3.

What Is the Impact?

You buy it; you use it; you throw it away; you buy a new one. How do you break the cycle? Do you need to? Besides considering the function and the quality of the product, what other decisions must be made? Does what you buy today have an impact on tomorrow?



In this section you will learn to identify examples of health and safety problems connected with the use of various products. You will examine the effects that the production, use, and disposal of consumer products have on your environment. Through the decision-making model, you will learn how to identify alternatives in the design of consumer products. You will have an opportunity to take action and demonstrate with the knowledge you have that you can make wise consumer choices that have a positive effect on the environment.



Activity 1: Health and Safety

Remember back when you were little; walking through the toy department with your mom, you spied the latest gizmo. You wanted it; you needed it; you had to have it! Then your mom said, "Sorry, it's not recommended for children your age." Silently you mumbled to yourself that you were just born too late.

1. Make a list of things that you have wanted but could not have or do because of your age.

There are many consumer products that have age or other restrictions on them. The restrictions have been placed on the products to limit the health and safety problems that might occur should the wrong person use the product. The restrictions have also been placed on the product to try to prevent problems that might occur through the use of the product.

Over-the-counter medication: medication that can be purchased without a doctor's prescription, usually for self-medication due to minor ailments

All **over-the-counter medications** carry a message which reminds adults to keep it safely out of the reach of children. Many medications that are made for children have pleasant flavours, and it is especially important for these products to be well out of a child's reach so that they do not mistake it for candy.

Some medications have warnings on their labels which indicate that if you have certain health conditions you should not take the drug.

Taking ASA or medications that have ASA in them while you have a viral infection, like the chicken pox or the flu, can cause complications and lead to you getting a life-threatening disease called Reye's Syndrome. Some medications like tetracycline, a common antibiotic, cause a child's permanent teeth to yellow if taken during early tooth development.

- [illegible]

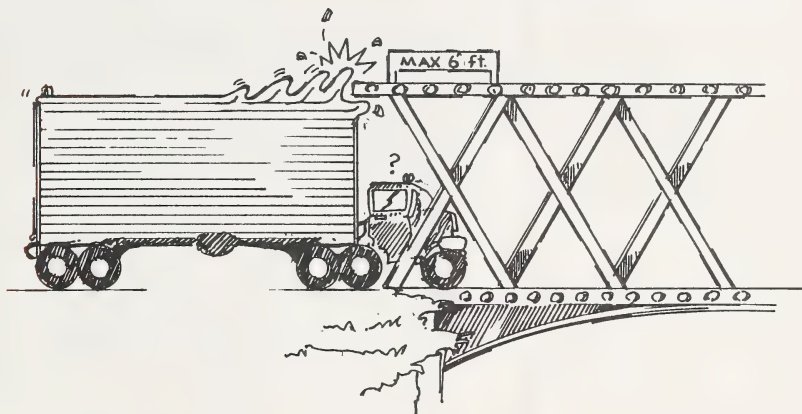


Often Toxic Round-ups are organized by the Environmental Services Department, Fire Department, or Police Department, but they could also be organized by you. You can start by rounding up the hazardous products in your home. You don't have to wait until an official event is organized to make your deposit either; any pharmacy will take outdated medications, and your local fire hall will accept the hazardous wastes. Used oil can be deposited at your local service station.

At the beginning of this activity you read that many medications carry warnings on them to encourage their safe use. There are other products besides medications that can endanger your health or safety if used.

4. What type of health or safety problems could occur with cigarettes, spray paint, and oven cleaner if they are used or misused? (The warnings that appear on the labels may tell you about these problems.)

Bridges and roadways are in a sense consumer products, and they have restrictions or limits set for their usage.



5. Can you think of three restrictions or limits that are set to ensure the safety of others on bridges and roads?

6. Can you think of some services or goods available to the consumer for which there are limits to the number of people allowed in at any one time?

All these restrictions on products available for consumer use are in place to protect the health and safety of the user.

7. List at least two health and safety problems that occurred with the development of high-speed automobiles. Write down how technology solved the problem.

Check your answers with your learning facilitator.

Activity 2: Production Costs

I remember when I was young, I could stand on the hilltop and see an endless forest. In the spring it would be full of new animal life and fresh colours. The summers were rich with the sounds of birds and the wind in the trees. Autumns were filled with magnificent colours before winter came with a blanket of snow.

Twenty years went by and the forest saw drought and frost. Ten more years after, it survived the fire. Five more years went by and the landscape started to change as trees were cut down; the top soil was blown away by the wind, the hillside washed into the river. One more year has gone by. There are only a few trees left, the river has been diverted, and the spawning waters of the fish have disappeared. Now, not a day goes by when a tree isn't cut from a forest.

I remember when I was young ... What will you remember?

1. Make a before and after drawing of a forest like the one described.

Think about these facts:

- Every minute 14 hectares of forest is cut down somewhere on this planet. Less than 10 percent is replanted.
- Some manufacturers replant 2 seedlings for every mature tree cut down. The survival rate is unknown.
- For every 17 trees that are cut down and turned into pulp, 1 tonne of paper is made.
- It takes anywhere from 25 to 50 years for a tree to reach maturity.

- One of the most poisonous chemicals, dioxin, is a by-product of bleaching paper products in the pulp and paper industry.
- A Pacific sea bird, known as the Marbled Murrelet, had its nesting grounds in the British Columbian coastal forests being destroyed by the logging industry. Only 45 000 birds remain, and it is now on the endangered species list.

2. Given the preceding information, list three improvements that could be made in the pulp, paper, and forest industries?

When you think about the costs of producing a product, you probably think first about the materials involved. However, energy is also important in the production process.

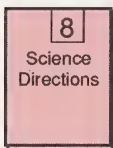
Read Products and the Environment on pages 143 and 145 of your textbook to learn about the use of energy in the production of consumer goods.

3. Do Activity 3-11, Making a Pen, on pages 144 and 145. Answer the following.

Procedure

Textbook question 2. (a):

Textbook question 2. (b):



Textbook question 2. (c):

Textbook question 3:

Textbook question 4. (a):

Textbook question 4. (b):

Textbook question 5:

Finding Out

Textbook question 1. (a):

Textbook question 1. (b):

Textbook question 2. (a):

Textbook question 2. (b):

Finding Out More

Textbook question 3. (a):

Textbook question 3. (b):

Check your answers with your learning facilitator.

Activity 3: Minimizing the Impact

Imagine yourself travelling back in time to the days when the early pioneers were first settling the prairies.

- 1. What would be three of the products that you have in your home now that you would take back with you?

- 2. What type of impact do you think the products would have on the people, the environment, and society?

Wise consumers shop for high quality at the lowest price. The cost of a product, however, cannot always be measured in dollars and cents. You must learn to shop wisely so it is not going to cost the environment.



There are many products today that are environmentally friendly. That means that they are less likely to endanger the health of living things, and that they cause little change to the environment, which affects the health and safety of others.

As a consumer, you decide what you want to buy. Therefore, as a consumer, you decide what the manufacturer is going to produce.

Manufacturers of products that are harmful to the environment will have to produce alternative products that are not harmful, or someone else will.

By today's standards, your great-grandparents would be considered to be living as if they were environmentally conscious. They did not use disposable diapers, because they hadn't been invented yet. The same is true with many of the household cleaners, TV dinners, electrical appliances, and excessive packaging.

3. What would your great-grandparents have used instead of these products? You will be able to find the answer by either talking to some older people or by thinking of things that environmentalists are trying to promote.
- a. plastic grocery bags _____
 - b. disposable diapers _____
 - c. oven cleaner _____
 - d. detergents _____
 - e. car _____
 - f. herbicides for garden _____
 - g. chemical fertilizer _____

There are also many cultural groups in Canada who choose to live a life-style now that still promotes the old ways.

That's not to say that all new inventions are harmful to the environment; many have made your life healthier and safer. The replacement of coal by electricity, for example, greatly cut down on the amount of carbon dioxide that is released into the atmosphere.



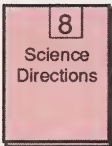
WESTFILE INC.

When it came to getting the most out of an item, your great-grandparents were not as quick to throw things away as some people are today. Today you live in a *throwaway* society dependent on convenience, fast food, and disposal items. Back then, furniture was repaired, and clothes were mended and handed down to youngsters in the family. Vegetable gardens were planted and people did home canning. Fabric scraps were made into quilts and old car tires could be made into a swing.

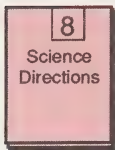


In your textbook you will learn more about recycling and reusing items by reading pages 146 and 147.

4. Depending on what the source was, label the item as either non-renewable (N) or renewable (R).
- a. plastic wrap _____
 - b. cotton shirt _____
 - c. rubber tire _____
 - d. paper plate _____
 - e. pop can _____
 - f. wooden furniture _____
5. Which of the items listed previously can be reused or recycled?



6. Create one logo to identify a product made from non-renewable resources and another logo to identify a product made from renewable resources. Draw your design in the space provided.



7. Do Activity 3-12, Waste Not, Want Not, on page 148 of your textbook. It asks you to be creative and think of what you could make with items that have been discarded. Space has been left for you to make the poster or the report and to answer the Finding Out questions.

Finding Out

Textbook question 1. (a):

Textbook question 1. (b):

Check your answers with your learning facilitator.

Activity 4: Out of Sight, Out of Mind?

1. Think about the last five things you threw in the garbage. Write down what the item was and the reason why you threw it out.

Depending on where you live, solid waste can go to several places; a landfill, where the garbage is later buried; an open dump, where it is left to rot in the open air; or an incinerator, where it is burned. Much of the liquid waste ends up in a sewer system which must be treated before the water is returned to a reservoir or river.

No matter where garbage goes, it has an effect on the environment. Landfill sites and open dumps can contaminate ground water supplies and use up valuable land. An incinerator releases carbon dioxide, which contributes to the greenhouse effect and can release toxic chemicals into the air. The unburned residue must still be dealt with. Liquid wastes must be chemically treated before being released. But these chemicals in turn contribute to pollution. There is no easy way to deal with garbage.

- 2. What happens to the garbage you throw out? (You may have to phone your local municipal government office to find out, e.g., if you live in a town you would phone the town office.)

- 3. Think of one harmful effect that your garbage may have on the environment.

Studies on waste management have become very popular, especially since the landfill sites are getting full. It has been estimated that landfill is made up of the following:

- 40% is paper, cardboard, and packaging
- 16% is yard waste (grass clippings, leaves)
- 10% is food waste (table scraps, peelings)
- 10% is metal scraps (including tin cans)
- 9% is miscellaneous waste
- 8% is glass
- 7% is plastic

When landfill sites are getting full, communities will start to raise fees for the disposal of things in landfills. This causes some people to dump their garbage in the nearest marsh, slough, ditch, river, beach, or campsite. In addition to adding pollutants to water supplies, this type of behaviour also alters and often eliminates the habitats of water fowl, fish, and animals. Water fowl nest in marshes and these nesting areas often become polluted with toxic chemicals and waste that people have illegally dumped.

4. Name four ways that you can cut down on the amount of garbage that you have in your home. Hint: Some of the ways may involve how you shop.

Check your answers with your learning facilitator.

Activity 5: The Choice Is Yours

A question that always confronts new parents is how to keep their baby dry and comfortable. They are often bombarded with advice from television *experts*, friends, relatives, and baby books. To keep the baby dry and comfortable, either cloth diapers or disposable diapers may be used.

1. Which would you choose?

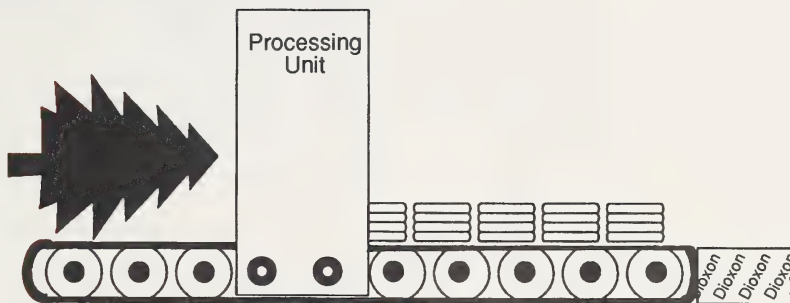
2. Which did your parents choose for you?

In Canada 85 percent of the babies are wearing disposable diapers. If a child were to wear disposable diapers from birth until reaching the age of two-and-a-half, over 7 000 diapers would be needed. Five trees would be needed to make these diapers. The industry is very prosperous and brings in over \$400 million per year in Canada.

On the other hand, it is a very costly industry in more ways than one. In Toronto alone it costs \$500 000 to haul away the 43 million disposable diapers discarded each year. The environmental price is even higher.

Where do you put 5 000 tonnes of disposable diapers? Almost everyone would rather have the 30 000 trees that were used to make them, than to have to deal with the cleanup in the end.

Cleanup includes dealing with the poisonous dioxins that are left behind as a by-product of the bleaching process in the pulp industry.



Disposable diapers make up approximately 2.5 percent of household waste. They may be disposable to the parent, but they will be around long after you have grandchildren. Disposables are estimated to take well over 500 years to decompose.

Slow decomposition isn't the only problem. Over 100 viruses can live in human waste while it is decomposing, including the live polio virus that is present in the fecal waste of recently vaccinated babies. The disposal sites are not equipped to handle human waste, and as a result, workers, water supplies, and wildlife are put at risk.

Cloth diapers are an old idea that has been brought back to life in view of an environmental crisis. Dollar-wise, the cost of using cloth diapers is two-thirds that of using disposable (if you use a diaper service), and half as much if you wash your own.

Environmentally, cloth can be reused on your next child, or torn up for rags if it has seen too much wear. When they do reach a disposal site, cotton diapers take only six months to decompose. Children wearing cloth diapers tend to suffer less from bladder infections and skin rashes.

Cloth diapers are not the most environmentally friendly product. During the growth of cotton plants, pesticides and herbicides are used. The fibres are also bleached before they are made into fabric, because society likes snow-white cottons, but it is a onetime process that results in a product that can be reused several times. Cotton diapers must be laundered and that consumes water, power, and detergents.

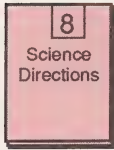
3. Compare the two alternatives of using disposable diapers and using cloth diapers.

a. Compare the alternatives from a parent’s personal point of view. No environmental concerns are to be considered.

b. Compare the alternatives from an environmental point of view that a parent may have.

4. If you had to make this decision now, what would you choose and why?

5. Make an illustration that could be displayed at your local supermarket which would show the facts about disposable and cloth diapers. If you have poster paper, you may use it for your illustration. Otherwise use the space provided.



Read **Making Choices** on pages 148 to 149 of your textbook. You will learn about some alternatives that are available so that you can purchase products that are less harmful to the environment. This reading also deals with choices based on ethical reasons.

6. Make a list of products that are in your home that are harmful to the environment.

7. From your list, name some products that could be replaced by an alternate, less harmful product.

By trying to eliminate one problem, manufacturers sometimes end up with another problem. An example would be the case of the polystyrene cup. The polystyrene cup used to be made using a gas which damaged the ozone layer. Manufacturers have stopped using the chemical, but they still make polystyrene cups, which do not biodegrade easily.

8. Can you think of a better alternative to polystyrene cups?

9. What ethical reasons might there be for not buying certain cosmetic products?

Share your answers with your learning facilitator.

Follow-up Activities

If you had difficulties understanding the concepts in the activities, it is recommended that you do the Extra Help. If you have a clear understanding of the concepts, it is recommended that you do the Enrichment.

Extra Help

To help you to master the concept of understanding how wise decision-making involves consideration of alternatives and implications, read the following paragraphs and answer the questions that follow.

Have you ever been in a situation where you are given a choice between two routes? Maybe you were taking a bike ride and it started to get late. You had the choice of going the long way home or taking a shortcut through a dangerous ravine that your parents told you to avoid.

What you probably didn't realize is that before you made your final choice, you considered the advantages and disadvantages of each alternative.

1. What would be an advantage and a disadvantage to taking the shortcut through the ravine?

The advantages and disadvantages that you considered were with regards to your health and safety and with your parents' wishes in mind. You looked ahead at the consequences your decision may bring and took the lesser of two evils; whether that was coming home late or taking a short cut through an area that your parents disapproved of.

When you are purchasing consumer products, you must also look at the consequences of your actions.

2. What would be the consequences of purchasing an aerosol hair spray that is not environmentally friendly?

3. What action would the manufacturers take if no one bought their product?

As a consumer you are the final decision maker. If you do not buy a product because it has taken too much energy to produce, its use harms the environment, or because it cannot be recycled, manufacturers will have to re-evaluate the products that they make to provide better alternatives.

Check your answers with your learning facilitator.

Enrichment

You read that animals are used for testing certain cosmetics. (Cosmetics include makeup, shampoo, soaps, deodorants, perfumes, hair sprays and gels, tooth polishes, and suntan lotions.)

Read the following points to learn more about the kinds of tests that are performed to ensure that cosmetic products are safe for humans.

The following involve animals:

- the Draize test for eye irritation

Shampoos and hair sprays are often tested in this manner. The product to be tested is continually sprayed into the eyes of rabbits until eye damage is noted.

- The LD-50 test for toxicity

Mice or rats are force-fed a product, possibly lipstick, to determine how much of the ingredient must be ingested until 50 percent of the test animals die.

- Test for skin irritation

Rabbits are shaved and skin creams and deodorants are applied to the area until it starts to become red and inflamed.

There are alternatives to animal testing:

- To replace the Draize Test, tissue samples are monitored for inflammation.
- To replace the LD-50 Test, computer programs which mimic physiological systems are used.
- To replace the shaving of animals, a synthetic membrane that acts as an artificial skin is used.

In Canada it is not required by law for manufacturers to list the ingredients in cosmetics. In the early 1970s, oils from the whale were used in the making of some cosmetics. Consumers boycotted those products and now whale products are no longer used. The basking shark is one endangered species that continues to be used in cosmetics. Oil from a shark's liver has a very low freezing point. Manufacturers admit that they could use oil from fish and seeds but claim that they haven't been sufficiently tested for safety.

To find out if the products you use have undergone animal testing, and to get an accurate listing of ingredients you can write to the following address:

Canadian Federation of Humane Society
Suite 102
30 Concourse Gate
Napan, Ontario
K2E 7V7

The following address can provide you with more general information about how animals are used in the development and manufacturing of products:

Canadian Council on Animal Care
Suite 1000
151 Slater Street
Ottawa, Ontario
K1P 5H3

In the space provided, write letters to the two sources of information given to you. The letter to the Humane Society is to request information about the ingredients found in cosmetics and to find out if animal testing is involved in some cosmetics you use. The letter to the Canadian Council on Animal Care is to ask for general information about the use of animals in the development and manufacturing of products.

Remember to use the business letter format that you used earlier in this module.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Blank lined area for writing answers.

Share your answers with your learning facilitator.


Conclusion

In this section you have learned to identify examples of health and safety problems connected with the use of various products.

You have also taken a look at what effects the production, use, and disposal of consumer products have on the environment. You have identified some alternatives in the design of certain consumer products. You will be able to use the knowledge you have gained in this section to help you to make wise consumer decisions in the future.

ASSIGNMENT

Turn to your Assignment Booklet and do the assignment for Section 4.

A small icon of a pink booklet with a black border, labeled "Assignment Booklet".

Assignment
Booklet

MODULE SUMMARY

In order to decide which products will best serve you, you must be aware that consumer products have a variety of characteristics.

Product testing provides important information to help the manufacturer and you, the consumer, make decisions about the product.

Standards are needed to make sure products are safe and meet your basic expectations.

The decisions made regarding the production, use, and disposal of products affect you and your environment.

There is an effective decision-making model to help you make wise consumer decisions.



Appendix

Glossary

Blind test

- an experiment in which the participants do not know if they have been given one substance or another
In a blind test of drugs, participants do not know whether they have been given real medication or a placebo.

Characteristics

- a distinct quality or feature that distinguishes one thing from another

Consumer

- a person who uses or buys goods or products

Consumer products

- products that people use and/or purchase to satisfy needs and wants

Craftsmanship

- the quality of workmanship

Double blind

- an experiment in which neither the participants nor the person directing the experiment knows who is receiving the real substance and who is being given the placebo

Durability

- the ability to stand wear, to last

Over-the-counter medication

- medications that can be purchased without a doctor's prescription, usually for self-medication due to minor ailments

Placebo

- medication containing no active substances, given as a control to an experiment often in the development of a new drug

Pharmacologist

- a person trained in the science of drugs, including their preparation, uses, effects, sources, and properties

Quality

- a degree of excellence or worth

Reliability

- dependability, trustworthiness

Unbiased

- fair, impartial, not favouring one side or the other

Suggested Answers

Section 3: Activity 2

4.
 - a. beans with pork
 - b. vanilla ice cream
 - c. chicken noodle soup
 - d. grape drink crystals
 - e. peanut butter
 - f. granola bars with marshmallows and chocolate chips
 - g. marshmallows
 - h. chocolate bar with peanuts

Section 3: Extra Help

1. D
2. A
3. E
4. B
5. H
6. C
7. G
8. F

N.L.C. - B.N.C.



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